CLAIMS

What is claimed is:

1. A method comprising inhibiting c-jun activation in mammalian or avian cells by contacting the cells with a substance that inhibits the activity of Janus family kinase 3 (JAK-3).

2. The method of claim 1 wherein the c-jun activation results from exposure of the cells to ara-C, a topoisomerase II inhibitor, ultraviolet radiation, an alkylating agent, or ionizing radiation.

3. The method of claim 1 wherein the c-jun activation results from exposure of the cells to ultraviolet radiation or ionizing radiation.

4. The method of claim 1 wherein the contacting is performed *in vitro*.

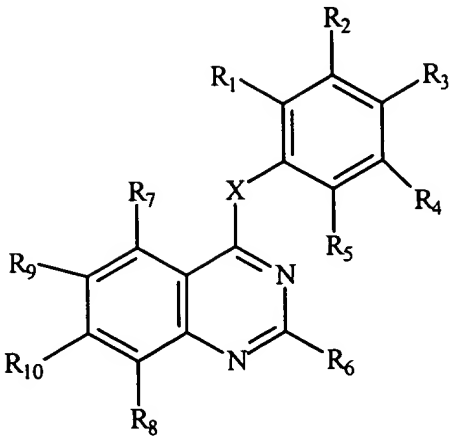
5. The method of claim 1 wherein the contacting is performed *in vitro*.

6. The method of claim 2 wherein the contacting occurs prior to the exposure.

7. The method of claim 2 wherein the contacting occurs after the exposure.

8. The method of claim 1 wherein the substance is a protein.

9. The method of claim 1 wherein the substance is a compound of formula I:



(I)

wherein

X is HN, $R_{11}N$, S, O, CH_2, or $R_{11}CH$;

R_{11} is hydrogen, $(C_1$-$C_4)$alkyl, or $(C_1$-$C_4)$alkanoyl;

R_1-R_8 are each independently hydrogen, hydroxy, mercapto, amino, nitro, $(C_1$-$C_4)$alkyl, $(C_1$-$C_4)$alkoxy, $(C_1$-$C_4)$alkylthio, or halo; wherein two adjacent groups of R_1-R_5 together with the phenyl ring to which they are attached may optionally form a fused ring, for example forming a naphthyl or a tetrahydronaphthyl ring; and further wherein the ring formed by the two adjacent groups of R_1-R_5 may optionally be substituted by 1, 2, 3, or 4 hydroxy, mercapto, amino, nitro, $(C_1$-$C_4)$alkyl, $(C_1$-$C_4)$alkoxy, $(C_1$-$C_4)$alkylthio, or halo; and

R_9 and R_{10} are each independently hydrogen, $(C_1$-$C_4)$alkyl, $(C_1$-$C_4)$alkoxy, halo, or $(C_1$-$C_4)$alkanoyl; or R_9 and R_{10} together are methylenedioxy; or a pharmaceutically acceptable salt thereof.

10. The method of claim 1 wherein the substance is 4-(4′-hydroxylphenyl)-amino-6,7-dimethoxyquinazoline or 4-(3′-bromo-4′-hydroxylphenyl)-amino-6,7-dimethoxyquinazoline; or a pharmaceutically acceptable salt thereof.

11. The method of claim 1 wherein the cells are mammalian.

12. The method of claim 1 wherein the cells are human.

13. The method of claim 1 wherein the cells are avian.

14. A therapeutic method for preventing or treating a pathological condition in a mammal wherein c-jun activation is implicated and inhibition of its activation is desired comprising administering to a mammal in need of such therapy, an effective amount of a substance that inhibits the activity of JAK-3.